



TELESCOPIC BRIDGE REVISITED : APT SOLUTION FOR TILTED MOLAR TEETH – A CASE REPORT

Dental Science

Dr. Kalpana.D	Prof. & H.O.D Dept. of Prosthodontics Dayananda sagar college of dental sciences Bangalore
Dr. Pathi venkatesh*	Post graduate student Dept. of Prosthodontics Dayananda sagar college of dental sciences Bangalore*Corresponding Author
Dr. Priyanka Bhat	Post graduate student Dept. of Prosthodontics Dayananda sagar college of dental sciences Bangalore
Dr. Naila P	Post graduate student Dept. of Prosthodontics Dayananda sagar college of dental sciences Bangalore

ABSTRACT

Tipped molars are often compromised by improper axial inclinations and inadequate pontic space. As a further complication, an infra-bony pocket may be present as a result of periodontal disease. Such a situation is observed clinically where there has been loss of permanent first molar and the lower second molar migrates mesially and tips into the edentulous area while the opposing molar supraerupts. A tilted abutment tooth consequently converts a simple procedure into a complex restoration. To prevent further complications, the abutment teeth should be uprighted prior to placement of fixed restorations. Occasionally, an infrabony pocket may occur on the mesial aspect of the tilted second molar. If there is an infrabony pocket present as well, a multidisciplinary approach involving orthodontic and periodontal disciplines may be necessary. Teeth with minimal osseous support can be uprighted, resulting in improved axial inclinations, crown-root ratios from occlusal reduction, and favourable changes in the contour of the alveolar crest. This article presents a clinical case report and the clinical problems that may arise when a tilted posterior tooth is used as an abutment

KEYWORDS

Tilted molars , Telescopic bridge , Telescopic crowns , Double crowns

Introduction

Tilted teeth are the angulated teeth which are out of ideal centric contact and deviated from the normal long axis. Teeth can be tilted in mesial, distal, buccal or lingual directions depending upon the cause for the same. The most common reason for tilted teeth is the adjacent and opposing edentulous space which makes the tooth to migrate. Such teeth cause food impaction, dental caries, periodontal and occlusion problems which creates unstable occlusion and improper maintenance of oral hygiene. Therefore, it is advisable to initiate treatment as soon as possible to restore arch integrity and a stable occlusion. Tilted tooth can be managed by simple recontouring, orthodontic uprighting, three-quarter crowns or telescopic crown. Telescopic crowns are also known as a double crown, crown and sleeve coping (CSC), or as Konuskroner, a German term that described a cone shaped design. A telescopic crown is defined as an artificial crown fabricated to fix over a coping. Each primary coping is usually fabricated parallel to the adjacent copings with an average wall taper of 6-degree angle of convergence. The copings are cemented to abutment teeth and then a fixed prosthesis as a secondary structure is fabricated and cemented over the copings. [8] This clinical report describes the use of a telescopic fixed dental prosthesis over a metallic primary coping on a tilted second molar abutment to restore a missing mandibular first molar.

Case report

Clinical Report A 28 year old male patient reported to Department of Prosthodontics Dayanandasagar college of dental sciences, Bengaluru, with the chief complaint of replacement of a missing lower right back tooth as he had difficulty in eating food. An intraoral examination revealed a missing mandibular right first molar. The mandibular right second mandibular molar was mesially tilted. After a thorough clinical, radiographic and model analysis and discussion, it was planned to rehabilitate the missing mandibular right first molar with a telescopic crown retained fixed partial denture. Diagnostic impressions were made with irreversible hydrocolloid. Interocclusal record was registered with wax wafer. A diagnostic preparation was done on the study cast. Occlusion was evaluated with a diagnostic wax-up on the articulator. An index of the waxed up tooth was made using addition silicone putty material. Treatment plan was discussed with the patient in detail and intentional root canal therapy was advised for the

tilted second molar. A slight excess tooth preparation especially on the mesial aspect was done on mandibular right second molar with a shoulder finish line. Gingival retraction was done and impression was made using addition silicone putty wash (aquasil, densply).

A provisional crown was fabricated using the waxed up index. The primary metal coping was fabricated with extensions till the finish line. The coping was evaluated for fit and margins on the prepared tooth. It was then luted to the prepared tooth using Type I glass ionomer cement (GC Gold Label I, GC Fuji). Conventional metal-ceramic crown tooth preparation was done on mandibular right second pre-molar with a shoulder finish line. Gingival retraction was done and an over impression was made with single step addition silicone putty wash over the prepared tooth and the primary coping. Interocclusal record was registered with a wax wafer. A provisional crown was fabricated using the waxed up index with self cure tooth coloured acrylic resin. This model was used for the fabrication of superstructure which was a full veneer metal-ceramic fixed partial denture. (Fig 3) Superstructure was seated over the metallic coping and restored the form and function of tilted molar abutment. The final occlusion and proximal contacts were evaluated.

Discussion

It is mandatory to restore the missing teeth with a removable or fixed partial prosthesis. But the treatment gets complicated when teeth that have to serve as abutments are tilted. The problem of achieving a common path of insertion for a fixed partial denture when a tilted posterior abutment is involved, can usually be solved by well planned tooth preparation in conjunction at times with intentional endodontic therapy. When tooth preparation alone cannot solve the problem, the mechanical solutions of the locked attachment and the telescopic retainer are available.

Weaver outlined a series of advantages and disadvantages of telescopic prostheses. The primary advantages include aligning abutments for the fabrication of a fixed partial denture without over-reducing tooth structure. Excellent fit of copings to the prepared teeth may reduce the possibility of recurrent caries on the abutment teeth when a long-span fixed partial denture is fabricated, or when abutment teeth have different degrees of mobility. An additional benefit of telescopic

prostheses is the retrievability of superstructure, which is usually placed on the copings. This feature may allow removal of the superstructure when there is a need for additional periodontal or endodontic therapy, extraction of failed abutments. Telescopic copings present some disadvantages that limit their uses to specific clinical situations. Like the advice for intentional root canal therapy and slight over tooth preparation especially on the mesial aspect of the tilted molar. The fabrication of copings and superstructure involves an increased number of complex laboratory and clinical procedures, such as additional casting and clinical remounting. Laboratory costs and treatment fees are generally increased. The use of the conventional telescopic prosthesis may not be recommended when there is a high esthetic demand. It may be difficult to place both the metallic collar of the coping and the metal margin of the superstructure sub-gingivally if a patient presents with high lip line at smile and with thin, delicate gingival tissue around anterior abutment teeth. This gingival tissue biotype is more prone to recession, possibly caused by prosthodontic procedures such as tooth preparation and impression making. The mesial marginal ridge of mesially tilted second molar would have obstructed the insertion of fixed partial denture. Attaining a common path of insertion was overcome with the telescopic retainer because of its retentive, stabilizing properties. Telescopic crowns, as a double-crown prosthodontic system allow cross-stenting of the dental arch thereby facilitating tooth stabilization over the long term. The double-crown concept and the intrinsic design involved ensures maximally favourable masticatory force transmission, since the latter always takes place axial to the teeth.

Conclusion

The management of tilted teeth can successfully be made with the fabrication of a telescopic coping. The treatment planning options depends upon each unique situation presented. The prosthodontic rehabilitation consumes less time compared to orthodontic management. The function, periodontal health and esthetics of a missing tooth was restored adequately in this case by a three- unit fixed partial denture over a telescopic coping on a mesially tilted second molar abutment.

Figures



Fig1. Pre operative view



Fig. 2 Tooth preparation done

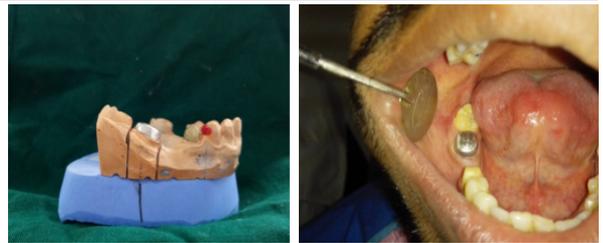


Fig.3 primary telescopic coping



Fig. 4 temporary bridge over the primary telescopic crown



Fig.5 Final prosthesis Buccal view

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